

Brussels, 16 October 2024
Case No: 91265
Document No: 1486146
Decision No: 161/24/COL

Accompanying text

to Decision No. 161/24/COL of 16 October 2024 on the methodology on the common and harmonised rules and processes for the exchange and procurement of aFRR balancing capacity for the Nordic LFC Block for Norway in accordance with Article 33(1) of Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing

Determining the methodology on the common and harmonised rules and processes for the exchange and procurement of aFRR balancing capacity for the Nordic LFC Block for Norway, as amended and approved by the EFTA Surveillance Authority

This document provides a track-changed version of the methodology on the common and harmonised rules and processes for the exchange and procurement of aFRR balancing capacity for the Nordic LFC Block in accordance with Article 33(1) of the Commission Regulation (EU) 2017/2195 establishing a guideline on electricity balancing received from the Norwegian transmission system operator ('TSO') with the Authority's amendments in line with Decision No 161/24/COL of 16 October 2024 (Document No. 1486075). It is for information purposes only.

Contents

Whereas.....	3
TITLE 1 General provisions.....	6
Article 1 Subject matter and scope.....	6
Article 2 Definitions and interpretation.....	6
Article 3 Notification process for the use of a market-based allocation process.....	6
TITLE 2 Nordic aFRR capacity market.....	7
Article 4 Market timeframe for application of the allocation process and duration of application....	7
Article 5 Prequalification of aFRR capacity.....	7
Article 6 High-level design of the aFRR capacity market.....	7
Article 7 Characteristics of products and bids.....	8
Article 8 aFRR capacity bid submission.....	9
Article 9 Settlement of procured aFRR capacity.....	9
Article 10 Methodology for allocating CZC for Nordic aFRR capacity market.....	10
Article 11 The demanded volume of aFRR capacity.....	10
Article 12 Procurement optimisation function and bid selection for aFRR capacity.....	10
Article 13 TSO-TSO settlement in the aFRR capacity market.....	12
Article 14 Publication of information for the exchange of aFRR capacity.....	12
TITLE 3 Final provisions.....	13
Article 15 Publication and implementation of the Proposal.....	13
Article 16 Language.....	13

Energinet, Fingrid, Statnett and Svenska kraftnät, taking into account the following;

Whereas

This document is a common proposal developed by the Transmission System Operators Energinet, Fingrid, Statnett, and Svenska kraftnät (hereinafter referred to as “TSOs”) in the geographic area covering the Nordic synchronous area regarding a proposal

<u>Whereas:</u>	<u>4</u>
<u>TITLE 1 General provisions</u>	<u>8</u>
<u>Article 1 Subject matter and scope</u>	<u>8</u>
<u>Article 2 Definitions and interpretation</u>	<u>8</u>
<u>TITLE 2 Nordic aFRR Capacity Market.....</u>	<u>10</u>
<u>Article 3 High-level design of the aFRR capacity market</u>	<u>10</u>
<u>Article 4 Characteristics of aFRR capacity bids</u>	<u>12</u>
<u>Article 5 aFRR capacity bid submission.....</u>	<u>13</u>
<u>Article 6 Procured volume of aFRR capacity</u>	<u>14</u>
<u>Article 7 Algorithm principles for the capacity procurement optimisation function.....</u>	<u>15</u>
<u>Article 8 TSO-BSP Settlement of procured balancing capacity.....</u>	<u>17</u>
<u>Article 9 TSO-TSO settlement in the aFRR capacity market</u>	<u>18</u>
<u>Article 10 Publication of information for the exchange of aFRR capacity</u>	<u>18</u>
<u>TITLE 3 Final provisions</u>	<u>19</u>
<u>Article 11 Publication and implementation of the Nordic aFRR Capacity Market Rules</u>	<u>19</u>
<u>Article 12 Language</u>	<u>20</u>

Whereas:

- (1) ~~This document provides for Norway a methodology~~ for the establishment of common and harmonised rules and processes for the exchange and procurement of ~~aFRR~~ automatic frequency restoration reserves ('aFRR') capacity in accordance with Article 33(1) of ~~the~~ Commission Regulation (EU) 2017/2195 of 23 November establishing a guideline on electricity balancing (hereafter referred to as the "(EB Regulation") and regarding a proposal Regulation) for the application of a ~~market-based allocation process~~ geographic area covering the load-frequency control block of the Nordic synchronous area ('Nordic LFC Block'), as specified in accordance with Article ~~38(1)141(2)~~ 38(1)141(2) of ~~the EB Regulation~~. ~~This proposal is hereinafter referred to as the "Proposal".~~
- (1) ~~The Proposal takes into account the general principles and goals set out in the EB Regulation as well as the~~ the Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (hereafter ('SO Regulation')). This methodology is hereinafter referred to as the "SO-Nordic aFRR Capacity Market Rules'.
- (2) ~~The transmission system operators of the Nordic LFC Block ('TSOs') are the TSOs exchanging or mutually willing to exchange balancing capacity pursuant to Article 33(1) of the EB Regulation~~. ~~Where the Nordic LFC Block encompasses both European Economic Area ('EEA') and third country TSOs, all EEA TSOs in that synchronous area shall endeavour to conclude with the third country TSOs an agreement setting the basis for their cooperation.~~
- (4)(3) ~~These Nordic aFRR Capacity Market Rules take into account the general principles and goals set out in the EB Regulation as well as the SO Regulation, the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (hereafter referred to as the "(CACM Regulation), Regulation)~~ and ~~the Regulation (ECU) 2019/943 No 714/2009 of the European Parliament and of the Council of 5 June 2019 13 July 2009 on the internal market conditions for access to the network for cross-border exchanges in electricity (hereafter referred to as the "(Electricity Market Regulation)-Regulation)~~.
- (2) ~~The goal of the EB Regulation is to establish an EU-wide set of technical, operational and market rules to govern the functioning of electricity balancing markets. It sets out rules for the procurement of balancing capacity, the activation of balancing energy and the financial settlement of balance responsible parties. It also requires the development of harmonised methodologies for the allocation of cross-zonal transmission capacity (hereafter referred to as "CZC") for balancing purposes. Such rules will increase the liquidity of short-term markets by allowing for more cross-border trade and for the more efficient use of the existing grid for the purposes of balancing energy.~~
- (2)(4) ~~The TSOs are mutually willing to exchange aFRR capacity within the Nordic synchronous area and have developed common and harmonised rules and processes for the exchange~~

~~and procurement of aFRR capacity.~~ The exchange of aFRR capacity is based on a TSO-TSO model taking into account the available CZC and the FRR cross-zonal capacity and the frequency restoration reserves ('FRR') dimensioning rules in accordance with Article 157 of the SO Regulation- ('Nordic aFRR Capacity Market').

~~(3)(5) The TSOs will set~~ The Nordic aFRR Capacity Market Rules define the capacity procurement process ~~and where~~ aFRR capacity bids will be submitted to the ~~system implementing the~~ capacity procurement optimisation function. Consistent with Article 58(3) of the EB ~~GL Regulation~~ and the EB ~~GL's Regulation's~~ aims as stated ~~in~~ its Article 3, this optimisation function ~~shall minimise~~ minimises the overall procurement costs ~~for the balancing market~~ of all jointly procured balancing capacity and ~~enhance~~ enhances the efficiency of balancing and of European and national balancing markets. The procurement of upward and downward aFRR capacity is carried out separately. To secure the exchange of aFRR capacity, the TSOs will allocate CZC cross-zonal capacity using a market-based allocation process. ~~The Proposal shall define the bidding zone borders included, the market timeframe, and duration of application.~~

~~(3) The TSOs will allocate CZC for the exchange of aFRR capacity when CZC is calculated in accordance with capacity calculation methodologies developed pursuant to the CACM Regulation. When the TSOs implement a flow-based approach, this allocation will occur in accordance with a capacity calculation methodology developed in accordance with Article 20(2) of the CACM Regulation. As a transitional solution until the flow-based approach is implemented, the capacity calculation will be based on the current net transfer capacity (NTC) approach.~~

~~(4)(6) The TSOs will ensure both that the availability of CZC cross-zonal capacity and that the operational security requirements set out in the SO Regulation are met. This is ensured~~ In accordance with Article 33(4) of the EB Regulation, cross-zonal capacity will be provided by the market-based allocation method of CZC cross-zonal capacity for the exchange of aFRR capacity and described in a separate proposal developed in accordance with pursuant to Article 41(1) of the EB Regulation. In addition, the TSOs are not allowed to increase the reliability margin due to the exchange of aFRR capacity.

~~(4) The TSOs shall publish, as soon as it becomes available, information on offered volumes and the prices of procured aFRR capacity, as well as information on the allocation and use of CZC for the exchange of aFRR capacity.~~

~~(5) Article 5(5) of the EB Regulation requires that the expected impact of the Proposal on the objectives of the EB Regulation is described. The impact is presented below (points 10 to 16 of this Whereas Section).~~

~~(5)(7)~~ The Proposal contributes and does not in any way hamper These Nordic aFRR Capacity Market Rules contribute to the achievement of the objectives of Article 3 of the EB Regulation. In particular, the Proposal serves Nordic aFRR Capacity Market Rules serve the following objectives:

- (a) The Proposal fosters These Nordic aFRR Capacity Market Rules foster effective competition, non-discrimination and transparency in balancing markets (Article 3(1)(a) of the EB Regulation) by creating a regional Nordic market with common rules and processes for the procurement and exchange of aFRR capacity ~~and by applying a market-based GZC allocation process for exchanging~~. These Nordic aFRR capacity. This Proposal Capacity Market Rules, together with the ~~proposal methodology~~ developed in accordance with Article 41 of the EB Regulation, ~~creates~~ create a common Nordic ~~system~~ market for the procurement and exchange of aFRR capacity. The market is based on common, transparent and non-discriminatory rules for submitting bids and selecting bids to cover aFRR capacity demand in each bidding zone efficiently. The aFRR capacity is settled to a clearing price for each bidding zone that signals the competitive bid price level in each market time unit and incentivises market players to bid according to their actual ~~reservation~~ cost for providing balancing capacity.
- (b) The Proposal enhances These Nordic aFRR Capacity Market Rules enhance the efficiency of balancing as well as the efficiency of European and national balancing markets (Article 3(1)(b) of the EB Regulation) and ~~contributes~~ contribute to the objective of integrating balancing markets and promoting the possibilities for exchanges of balancing services while contributing to operational security (Article 3(1)(c) of the EB Regulation). The bid selection of the Nordic market is based on an optimisation that seeks to cover demand in each bidding zone for aFRR balancing capacity by minimising total social costs ~~including, where relevant, the foregone value of GZC to the energy market~~. This contributes to efficient balancing by making possible an efficient utilisation of aFRR resources across bidding zone borders in order to secure the volume of balancing capacity needed to maintain operational security. ~~When a European balancing energy market is established, BSPs with aFRR capacity contracts will be committed to submit bids into the balancing energy market on equal terms with BSPs without aFRR balancing capacity contracts, thereby contributing to the efficiency and integration of European markets. Simulations of the aFRR market with realistic assumptions and based on historic bid data from 2018 that take account of the impact of allocating GZC for the exchange of aFRR capacity on the day-ahead energy market show that the increase in socio-economic surplus created by the proposed aFRR capacity market dominates the negative impact on socio-economic surplus in the day-ahead energy market by a large margin, and thereby enhances overall efficiency.~~
- (c) The Proposal contributes These Nordic aFRR Capacity Market Rules contribute to the efficient long-term operation and development of the electricity transmission system and electricity sector in the Union/EEA while facilitating the efficient and

consistent functioning of the day-ahead, intraday and balancing markets (Article 3(1)(d)) of the EB Regulation) since ~~it establishes~~they establish a Nordic market for aFRR capacity and ~~implements~~implement a market-based ~~GZC~~cross-zonal capacity allocation process. The Nordic aFRR ~~capacity market~~Capacity Market provides price signals that reflect the scarcity of aFRR capacity in different bidding zones and ~~the cost of allocating~~GZC~~cross-zonal capacity~~ for the exchange of aFRR capacity ~~between~~ these bidding zones. It thereby contributes to efficient ~~investment~~in-market entry of new ~~capability for reserve~~units or groups which can provide aFRR capacity. ~~The implementation of~~By using cross-zonal capacity from a market-based ~~GZC~~cross-zonal capacity allocation process ~~ensures that~~as an input to the balancing procurement process described in the Nordic aFRR Capacity Market Rules, the value of ~~GZC to the~~cross-zonal capacity for the exchange of energy in the day-ahead energy market is ~~properly~~properly considered ~~properly~~ in the determination of the efficient exchange of aFRR capacity ~~and that the~~. Hence, these Nordic aFRR ~~capacity market allows~~Capacity Market Rules allow for the consistent functioning of the day-ahead and intraday markets alongside the balancing markets.

- (d) ~~The Proposal ensures that the procurement of balancing services is~~These Nordic aFRR Capacity Market Rules ensure fair, objective, ~~and~~ transparent ~~and~~rules for a market-based, ~~avoids undue barriers to entry for new entrants, fosters the liquidity of balancing markets while preventing undue distortions within the internal market in electricity (Article 3(1)(e) of the EB Balancing)~~ since the TSOs propose the establishment of a common aFRR procurement of balancing capacity market for the entire Nordic region ~~in which there is~~. By applying a market-based allocation process for ~~GZC~~the cross-zonal capacity in this procurement process, the Nordic aFRR Capacity Market Rules avoid undue distortions within the internal market in electricity. Therefore, the Nordic aFRR Capacity Market Rules are following the objective of Article 3(1)(e) of the EB Regulation.
- (e) ~~The Proposal facilitates~~These Nordic aFRR Capacity Market Rules facilitate the participation of demand response including aggregation facilities and energy storage while ensuring that they compete with other balancing services on a level-playing field and, where necessary, act independently when serving a single demand facility (Article 3(1)(f) of the EB Balancing Regulation) by establishing a common Nordic market place for aFRR capacity in which the requirements for aFRR capacity products are designed such that they can also be fulfilled by demand response, aggregation facilities and energy storage.
- (f) ~~The Proposal facilitates~~These Nordic aFRR Capacity Market Rules facilitate and ~~does do~~ not hamper the participation of renewable energy sources in the Nordic aFRR ~~capacity market~~Capacity Market and thus ~~supports~~support the achievement of the European Union target for the penetration of renewable generation (Article 3(1)(g) of the EB Regulation).

~~(6) In conclusion, the Proposal contributes to the general objectives of the EB Regulation to the benefit of all market participants and electricity end consumers.~~

~~SUBMIT THE FOLLOWING PROPOSAL TO THE RELEVANT REGULATORY AUTHORITIES WITHIN THE NORDIC SYNCHRONOUS AREA:~~

TITLE 1

General provisions

Article 1

Subject matter and scope

- ~~1. The Proposal shall be considered~~This document establishes the common proposal from the TSOs for the establishment of common and harmonised rules and processes for the exchange and procurement of aFRR balancing capacity (hereafter referred to as the "Nordic aFRR capacity market") in accordance with Article 33(1) of the EB Regulation including rules while respecting the requirements of Article 32 of the EB Regulation.
- ~~1.2.~~The Nordic aFRR Capacity Market Rules include the algorithm principles for the capacity procurement optimisation function for the application procurement of a market-based CZC allocation process balancing capacity bids in accordance with Article 38(4)58(3) of the EB Regulation.
- ~~2.3.~~These Nordic aFRR Capacity Market Rules apply to the TSOs of the Nordic LFC Block which are the TSOs exchanging or mutually willing to exchange balancing capacity pursuant to Article 33(1) of the EB Regulation. The Proposal covers Nordic aFRR Capacity Market Rules cover the bidding zones and bidding zone borders of the Nordic synchronous area, which corresponds to an LFC block (hereafter referred to as "of the Nordic LFC Block") as defined in accordance with Article 141(2) of the SO Regulation.
- ~~4. Article~~For the exchange of balancing capacity, these Nordic aFRR Capacity Market Rules cover the bidding zone borders as defined in the methodology pursuant to Article 38(1)(b) of the EB Regulation.

Article 2

Definitions and interpretation

1. For the purposes of the ~~Proposal~~Nordic aFRR Capacity Market Rules, terms used in this ~~Proposal~~document shall have the meaning of the definitions included in Article 2 of the EB Regulation, Article 3 of the SO Regulation ~~and~~ Article 2 of the CACM Regulation, ~~The~~the Electricity ~~Market~~ Regulation, the Commission Regulation (EU) No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets and amending Annex I to Regulation (EC) No 714/2009 of the European Parliament and of the Council (~~hereafter referred to as "Transparency Regulation"~~) ~~and Directive (EU) 2019/944 ("Transparency Regulation")~~ and the Directive 2009/72/EC of the European Parliament and of the Council

of 13 July 2009 concerning common rules for the internal market in electricity ('Electricity Directive'), as amended for the purposes of the EEA Agreement.

2. In addition, in this Proposal, the following terms/definitions shall have the meaning below/also apply:
 - a) "market time unit (MTU)"/"TSO demand' means, in this proposal, the market time unit applied in the day-ahead market timeframe;
 - (a) "prequalified a balancing service provider (BSP)" means prequalified BSP capacity volume to be procured determined per scheduling area and bidding zone in accordance with Article 18(5)(32(1) of the EB Regulation participating in the Nordic aFRR capacity market;
 - (b) 'uncongested area' means the widest area, constituted by one or multiple bidding zones, where the exchange of balancing capacity is not restricted by the available cross-zonal capacities allocated to the exchange of balancing capacity, during a specific market time unit;
 - (c) 'cross zonal marginal price' means the single marginal price representing the equilibrium between balancing capacity bids and TSO demand as revealed by applying the uniform price auction principle.
3. In the Proposal/Nordic aFRR Capacity Market Rules, unless the context requires otherwise:
 - (a) the singular indicates the plural and vice versa;
 - (b) the table of contents and headings are inserted for convenience only and do not affect the interpretation of the Proposal; and this methodology;

a) any reference to legislation, regulations, directive, order, instrument, code or any other enactment/cross-zonal capacities shall include any modification, extension or re-enactment of it then in force.

Article 3

Notification process for/also the use of a market-based reference to allocation process

1. The TSOs shall notify Transmission System Operator(s) located/constraints as applied in the Nordic synchronous area about the establishment of a Nordic balancing/respective capacity market in accordance with Article 150 of the SO Regulation. This notification shall include the:
 - a) transmission system operators involved;
 - (c) expected date for the balancing capacity market calculation methodology pursuant to Article 33(4)20 of the EBCACM Regulation or Article 10 of the Commission Regulation with the CZC (EU) 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation to enter ('FCA Regulation'), once approved in accordance with the relevant legal framework, as incorporated into operation; the EEA Agreement; and
 - b) expected amount of power interchange due to the cross-zonal balancing capacity activation process;

- e) ~~reserve type and maximum volume of exchange of balancing capacity; and~~
 - d) ~~timeframe of the exchange of balancing capacity.~~
2. ~~The TSOs shall make the notification at least 3 months before the CZC allocation process enters into operation.~~

(d) any reference to an Article without an indication of the document shall mean a reference to this methodology.

TITLE 2

Nordic aFRR capacity market

Article 4

Capacity Market timeframe for application of the allocation process and duration of application

- 3. ~~The TSOs shall apply to the Nordic aFRR capacity market a market-based CZC allocation process in accordance with Article 41 of the EB Regulation.~~
- 4. ~~The corresponding market-based allocation of CZC shall be determined together with the procurement of aFRR capacity one day (D-1) prior to the delivery day.~~
- 5. ~~The TSOs will develop a methodology for a co-optimised allocation process of CZC for the exchange of balancing capacity in accordance with Article 40 of the EB Regulation and will submit a proposal for the use of this process pursuant to Article 38(1) of the EB Regulation together with an assessment on whether or not to apply the co-optimized allocation process as soon as this process is available for application by the TSOs.~~

Article 5

Prequalification of aFRR capacity

- 1. ~~Each BSP participating in the Nordic aFRR capacity market shall be prequalified in accordance with Articles 16 and 18(5) of the EB Regulation. Prequalified BSPs shall be eligible to submit aFRR capacity bids to the Nordic aFRR capacity market.~~

Article 6

Article 3

High-level design of the aFRR capacity market

- 1. ~~The volume of aFRR capacity procured by TSOs consists of separate volumes for upward aFRR capacity and downward aFRR capacity. These volumes to be procured are defined in accordance with Article 11.~~
- 1. ~~There will be a daily auction. The procurement of aFRR capacity shall be performed daily in D-1 for each MTU.~~
- 2. ~~Prequalified BSPs will submit their aFRR capacity bids to the common aFRR capacity day-ahead market time unit of the trading day.~~

- ~~2. The Nordic aFRR Capacity Market is organised based on a TSO-TSO model with a single balancing capacity gate closure time for prequalified BSPs to submit aFRR capacity bids will be at most one day prior to the delivery day balancing service providers ('BSPs') and fall between 00:00 and 12:00 CET. A single which equals the balancing capacity bid submission gate closure time will apply to the whole market, such that all prequalified BSPs must submit bids by the same point in time.~~
- ~~3. The for TSOs will announce the gate closure time to submit aFRR capacity bids, or of any changes to this gate closure time. Such announcements will be made at least four weeks before they take effect, excepting instances when the gate closure time is exceptionally delayed or else the to submit the balancing capacity bids per bidding window is reopened. In these instances, the TSOs will announce these changes as soon as they are able to.~~
3. In choosing the gate closure time, TSOs will endeavour to set the gate closure time as close to real time as possible subject to the need to both ensure the resilience zone to the capacity procurement optimisation function of the balancing capacity market, for example in the event of insufficient bids or a technical failure, and fulfil the TSOs' obligations, notably in relation to maintaining the operational security of the power system and providing information on the CZC capacity available to the electricity market. Nordic aFRR Capacity Market.
- ~~4. The procurement~~ The balancing capacity gate closure time shall be within the balancing capacity market timeframe defined in accordance with the methodology pursuant to Article 38 of the EB Regulation. The exact timing of the gate closure time shall be set following the process described in paragraphs (9) and (10).
- ~~4.5. The capacity procurement optimisation function selects aFRR capacity bids and allocates CZC for taking into account the purpose of exchanging aFRR capacity in accordance with constraints and objectives pursuant to Article 12.7.~~
- ~~5.6. Accepted aFRR capacity bids shall be notified to the relevant BSPs no later than 30 minutes after completion of the procurement. The publication of the procurement results shall be in accordance with Article 44.10.~~
- ~~6.7. Accepted aFRR capacity bids shall be fully available for aFRR energy activation during the delivery period. In the event that a BSP transfers its aFRR capacity obligation in accordance with Article 34 of the EB Regulation, this obligation to be fully available for aFRR energy activation during the delivery period will also be transferred as part of the capacity obligation.~~

Article 7

8. Without prejudice to an exemption given pursuant to Article 34(1) of the EB Regulation, BSPs shall, when transferring their obligation to provide aFRR balancing capacity, also transfer their obligation to be fully available for aFRR energy activation during the delivery period.
9. The TSOs shall announce the gate closure time for BSPs to submit aFRR capacity bids, or any changes to this gate closure time. Before setting the exact time of the balancing capacity gate closure time, TSOs shall publicly consult stakeholders. Such a consultation will be performed at least 3 months before the implementation and last for at least 2 weeks.

10. The announcement of the balancing capacity gate closure time shall be made at least four weeks before taking effect. This announcement shall also include exceptions for instances when the gate closure time is delayed or when the bidding window is reopened. In these instances, the TSOs shall announce these changes as soon as possible and with a reasonable lead time before the actual application.

Article 4

Characteristics of ~~products and~~ aFRR capacity bids

1. ~~The aFRR capacity bid shall include the following information:~~
 - a) ~~price of the bid in €/MW;~~
 - b) ~~volume of the bid in MW;~~
 - e) ~~MTU(s) for which the bid is valid;~~
 - d) ~~bidding zone for which the bid is issued;~~
 - e) ~~divisibility of the bid; and~~
1. ~~direction of the bid (upward)~~ The TSOs shall use the aFRR standard product for balancing capacity corresponding to the day-ahead market time unit as defined in Annex 1 to the methodology pursuant to Article 25(2) of the EB Regulation, once approved in accordance with the relevant legal framework, as incorporated into the EEA Agreement.
 - f) ~~BSPs may link their bids for standard aFRR balancing capacity or downward balancing product per day-ahead market time unit, which are submitted to the capacity)-~~
- 1.2. ~~The aFRR capacity bid shall comply with the procurement optimisation function, in one of the following requirements ways:~~
 - a) ~~minimum bid volume equals 1 MW;~~
 - b) ~~the volume of the bid shall be divisible by 1 MW;~~
 - e) ~~only a bid with a bid volume of less than 50 MW can be indivisible; and~~
 - d) ~~the full activation time of the bids shall be set by each TSO in accordance with the methodologies pursuant to article 157 and 159 of the SO-GL Regulation.~~
2. ~~The following links between bids may be used:~~
 - (a) ~~bids with the same volume, direction and prices of price, which is applicable for consecutive MTUs can be linked day-ahead market time units, meaning that all these bids must either be rejected or accepted; for all involved day-ahead market time units; and~~
 - (b) ~~an upward bid can be linked with a downward bid efor the same MTU day-ahead market time unit, meaning that both bids must either be rejected or accepted; and.~~
3. ~~it will be possible to present a single upward or downward~~ The use of the linking pursuant to paragraph (2)(b) is subject to exemptions to the requirement to procure upward and downward balancing capacity separately pursuant to Article 32(3) of the EB Regulation granted by each regulatory authority to the relevant TSO for all TSOs of the Nordic LFC Block. In the exemptions the exact linking characteristics shall be defined.

~~2.4. BSPs may provide a bid as a bid curve, where only one bid of the group of bids constituting the bid curve can be selected. Bid curves cannot be combined with the linking of upward and downward bids.~~

Article 8

5

aFRR capacity bid submission

- ~~1. Prequalified BSPs or service providers delegated by these prequalified BSPs are allowed to shall submit bids for their aFRR capacity.~~
1. Bids shall be submitted bids to the capacity procurement optimisation function by the gate closure time as described defined in Article 63(4).
2. The bid format and communication protocol shall be in accordance with ENTSO-E data exchange recommendations. The latest versions for submission of the recommendations aFRR capacity bids shall be made available on the TSOs' websites.
- ~~2. The TSOs shall be able to view all All aFRR capacity bids submitted for the Nordic aFRR capacity market.~~

Article 9

Settlement of procured aFRR capacity

3. BSPs will receive an availability payment for each MTU in which their aFRR capacity bid is accepted. This availability payment is equal to the accepted bid volume multiplied by Capacity Market shall be visible to the clearing price for TSOs after the relevant aFRR capacity product in the relevant bidding zone, as defined in paragraphs 2 and 3 submission of the bids.
1. The clearing price in a bidding zone will equal the greatest of:
 - a) the highest accepted bid for that product in that bidding zone, and,
 - b) where CZC capacity is reserved to import aFRR capacity into the relevant bidding zone, the price of any aFRR capacity imported into the zone, which equals the sum of the clearing price of the aFRR product in the exporting bidding zone and the CZC reservation cost assumed to enable the transfer, as defined in Articles 5 and 6 of the TSOs' proposal for a market-based allocation process of CZC for the exchange of balancing capacity pursuant to Article 41 of the EB Regulation.
2. Notwithstanding paragraph 2, where, for a given cross-zonal border, the implied market value of CZC for the exchange of energy, as defined in Article 5 of the TSOs' proposal for a market-based allocation process of CZC for the exchange of balancing capacity pursuant to Article 41 of the EB Regulation, is zero and the absolute limit on the volume of aFRR capacity that can be reserved, as defined in Article 4 of the TSOs' proposal for a market-based allocation process of CZC for the exchange of balancing capacity pursuant to Article 41 of the EB Regulation, is not binding in the market solution, the connected bidding zones across the relevant border shall have the same clearing price. In these cases, the bidding

zone with the highest price, as determined by the rules in paragraph 2, among the set of bidding zones that must have the same price sets the price in all these bidding zones.

Article 10

Methodology for allocating CZC for Nordic aFRR capacity market

- ~~1. The TSOs shall ensure both the availability of CZC and that the operational requirements set out in the SO Regulation are met by applying a market-based allocation process for allocating CZC to the balancing timeframe. The TSOs shall allocate CZC to the Nordic aFRR capacity market in accordance with a methodology pursuant to Article 41(1) of the EB Regulation.~~
- ~~2. The TSOs shall allocate CZC for the exchange of aFRR capacity only if CZC capacity is calculated in accordance with the capacity calculation methodology developed pursuant to the CACM Regulation. As a transitional solution until a flow-based approach, which is the approved capacity calculation methodology for CCR Nordic, has been implemented in the CCR Nordic, the TSOs are allowed to allocate CZC for the exchange of balancing capacity by applying the current capacity calculation method, i.e. the net transfer capacity (NTC) method.~~
- ~~3. The allocated CZC for the exchange of aFRR capacity shall be taken into account in the day-ahead and intraday capacity calculation timeframe as previously allocated CZC in accordance with a methodology pursuant to Article 20(2) of the CACM Regulation.~~
- ~~4. The TSOs shall regularly assess whether the CZC allocated for the exchange of aFRR capacity is still needed for that purpose. When CZC allocated for the exchange of aFRR capacity is no longer needed, such CZC shall no longer be included as previously allocated CZC in the calculation of CZC.~~

Article 11

The demanded volume of aFRR capacity

- ~~1. The TSOs shall define the reserve capacity requirements in accordance with Article 32(1) of the EB Regulation.~~

Article 6

Procured volume of aFRR capacity

1. Each TSO is responsible for demanding~~procuring~~ the TSO demand for aFRR capacity for its bidding zone(s) necessary to fulfil the requirements set in the Nordic System Operation Agreement including the synchronous area operational agreement in accordance with Article 32(1)118 of the EBSO Regulation and the LFC Block operational agreement in accordance with Article 119 of the SO Regulation for Nordic synchronous area.
2. Each TSO shall inform the BSPs and other TSOs about the demanded volume~~TSO demand to be procured for each day-ahead market time unit~~ of aFRR capacity in the trading day and for each bidding zone(s) of their control area, at the latest two hours before the gate closure time of the aFRR capacity market.

Article 12

**Procurement optimisation function and bid selection
Algorithm principles for aFRRthe capacity procurement optimisation function**

1. The inputs ~~to~~ of the algorithm for the capacity procurement optimisation function are:
 - (a) TSO demand of aFRR capacity per direction for each day-ahead market time unit and for each bidding zone;
 - ~~a) maximum procurement volume of aFRR capacity for a specific bidding zone, or a set of bidding zones (This can be included if necessary due to operational security requirements the list of aFRR capacity bids pursuant to Article 165(3)(g) of the SO Regulation);~~
 - ~~b) minimum procurement volume of aFRR capacity for a specific bidding zone, or a set of bidding zones (This can only be used if the dimensioning process according to Article 157(2)(g) of the SO Regulation requires such limitations);~~
 - ~~c) bids 4 per direction from BSPs for each bidding zone;~~
 - (b) the forecasted market value of CZC for each bidding zone border sorted in the day-ahead market timeframe defined in accordance with Article 5 of the TSOs' proposal for a market-based allocation process of CZC for the exchange of balancing capacity pursuant to Article 41 of the EB Regulation order of their bid prices;
 - ~~d) the mark ups to the forecasted market value of CZC for each bidding zone border in the day-ahead market timeframe defined in accordance with Article 6 of the TSOs' proposal for a market-based allocation process of CZC for the exchange of balancing capacity pursuant to Article 41 of the EB Regulation; and;~~
2. ~~The maximum volume of CZC that can be~~ The constraint of the algorithm for the capacity procurement optimisation function is:
 - (a) the available cross zonal capacity allocated to the exchange of balancing capacity defined in accordance with Article 4 of the TSOs' proposal for a market based allocation process of CZC for the exchange of balancing capacity methodology applied pursuant to Article 4438(1) of the EB Regulation.
4. ~~In~~ The objective of the algorithm for the capacity procurement optimisation process, bid selection together with the CZC allocation are optimised function is to minimise the ~~socioeconomic provision~~ costs of procurement BSPs given the ~~constraints~~ constraint defined in Article

~~12(1). The socioeconomic costs of procurement are~~ paragraph (2) and defined as follows, summing across ~~all bids, bidding zones, borders and directions.~~

~~2.3. $\sum_d \sum_t \sum_i$ d, day-ahead market time units of the trading day t and aFRR capacity bids i , a_i , b_i (bidcost $_i$ × bid volume $_i$ × selected $_i$ + czccost $_{ab}$ × czc reservation $_{ab}$)~~

$$\sum_d \sum_t \sum_i (\text{bidcost}_i \times \text{bid volume}_i \times \text{selected}_i)_{td} \quad (\text{Equation 1})$$

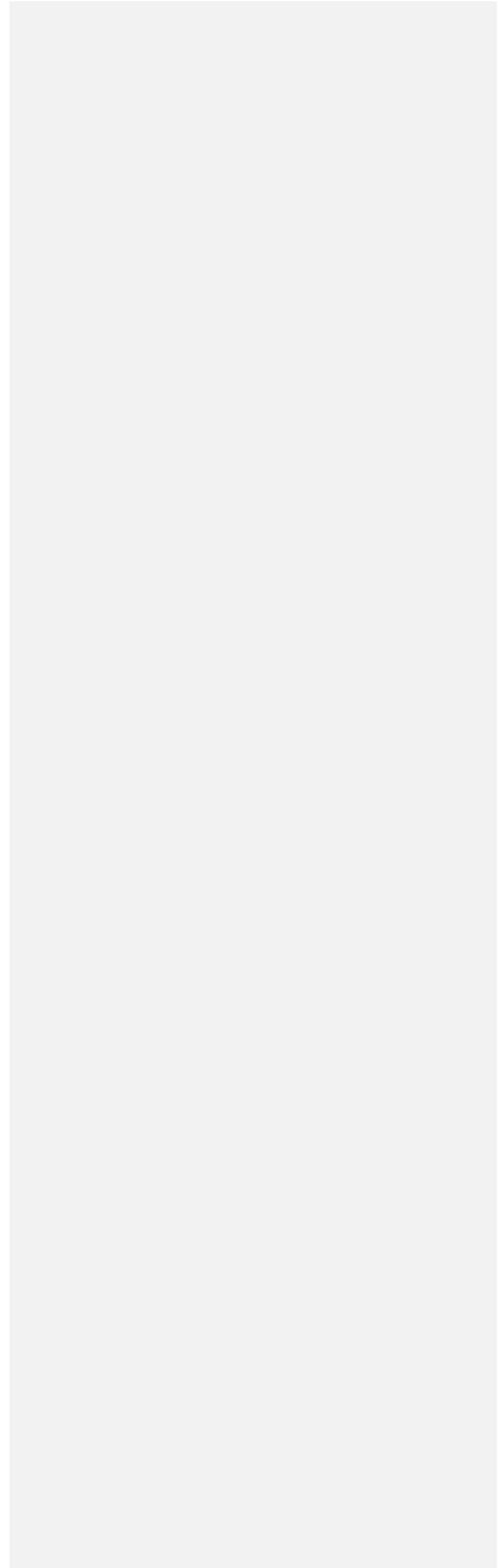
Where:

~~Where:~~

bidcost $_i$ is the aFRR capacity bid cost of aFRR capacity bid i ;

bidvolume_i is a valid increment of aFRR capacity bid i ;
 selected_i is boolean denoting whether or not the aFRR capacity
bid increment is accepted;

(Equation 1)



~~ezccost_{ab} is the cost of reserving CZC from bidding zone a to bidding zone b, which is equal to the sum of the forecasted market value of the CZC and any applicable mark-up as defined in Articles 5 and 6 of the TSOs' proposal for a market-based allocation process of CZC for the exchange of balancing capacity pursuant to Article 41 of the EB Regulation; and,~~

~~ezcreservation_{ab} is the volume of CZC capacity from bidding zone a to bidding zone b reserved for the exchange of aFRR capacity.~~

~~3.4.~~ The outputs from the algorithm for the capacity procurement optimisation function for each day-ahead market time unit are:

- (a) accepted aFRR capacity bids per direction for each bidding zone (selected in Equation 1); and,
- (b) allocated CZC for the volume of exchange of aFRR capacity for each bidding zone border (~~ezcreservation_{ab} in Equation 1~~).

~~2.~~ The TSOs shall not increase the reliability margin calculated in accordance with Article 22 of the CACM Regulation due to the exchange of aFRR procured upward balancing capacity.

Article 13

TSO-TSO settlement in the aFRR bids or downward balancing capacity market

~~1.~~ TSOs shall pay for the volume of aFRR capacity required by their bidding zones, as described in Article 11.

~~4.5.~~ Where aFRR capacity volumes are transferred across a bidding zone border, as shown by the corresponding reservation of CZC to enable the transfer, and the border separates two bidding zones controlled by different TSOs, settlement between the TSOs bids shall be conducted as described in paragraph 3 firm after the capacity procurement optimisation function, pursuant to paragraphs (1) to (4), is performed.

~~6.~~ The TSO importing aFRR capacity will pay the ~~If the capacity procurement optimisation function fails to provide the outputs set in Article 7(4) due to not meeting the TSO demand for one or several bidding zone(s) for one or several day-ahead market time unit(s), a fall-back procedure with a second round of capacity procurement optimisation is executed for relevant bidding zone borders, where the TSO demand of the relevant bidding zone(s) will be reduced until the outputs set in Article 7(4) can be provided.~~

Article 8

TSO-exporting-BSP Settlement of procured balancing capacity

~~1.~~ Each connecting TSO shall settle with each BSP each accepted aFRR capacity an amount/bid volume for each day-ahead market time unit and for each direction.

~~2.~~ The settlement shall be equal to the volume of aFRR accepted balancing capacity transferred/bid volume multiplied by with the average clearing/respective balancing capacity price(s) as defined in paragraph (3).

~~3.~~ The balancing capacity price shall be a cross zonal marginal price calculated by the capacity procurement optimisation function for each standard balancing

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capacity product, for each direction and for each day-ahead market time unit in each uncongested area in accordance with the following principles:

- (a) the cross zonal marginal price of an uncongested area shall be the marginal price of the marginal accepted bid in this uncongested area and the imported cross zonal marginal price; or
- (b) linked bids of the types described in Article 4, paragraph (2) shall by default not set the cross-zonal marginal price in the uncongested area. However, such a linked bid can lead to setting a higher cross-zonal marginal price in one or more day-ahead market time units to allow the linked bid to exactly recover its overall bid costs.

Article 9

TSO-TSO settlement in the aFRR capacity market

1. TSOs shall settle between them the difference between the TSO demand for their bidding zones in accordance with Article 6 and the volume equal to the sum of the volume of the accepted aFRR capacity bids in their bidding zones.
- 1.2. The TSO(s) importing aFRR capacity shall pay an amount equal to the product of the volume of aFRR capacity exchanged and the balancing capacity price pursuant to Article 8 for the relevant day-ahead market time unit, bidding zone and aFRR capacity product in the two bidding zones, as defined in Article 9.

Article 14

3. The TSO(s) exporting aFRR capacity shall receive an amount equal to the product of the volume of aFRR capacity exchanged and the balancing capacity price pursuant to Article 8 for the relevant day-ahead market time unit, bidding zone and aFRR capacity product.
4. The difference between the settlements pursuant to paragraphs (2) and (3) shall be the balancing capacity congestion income and shared in accordance with the methodology pursuant to Article 41(1) of the EB Regulation.

Article 10

Publication of information for the exchange of aFRR capacity

1. The TSOs shall publish the following information for aFRR capacity in accordance with Article 12(3) of the EB Regulation:
 - (a) offered volumes as well as offered prices of procured aFRR balancing capacity bids for each bidding zone. The bid data shall be, anonymised where necessary, no later than one hour after the results of the procurement have been notified to the BSPs. This information shall be published to the market on a publicly accessible website once the market clearing results outputs of the capacity procurement optimisation function are available and no later than one hour after the accepted aFRR capacity bids have been notified to the relevant BSPs;
 - a) the allocated CZC for the exchange of aFRR capacity for each MTU on the following day. This information shall be published after the aFRR capacity market clearing results are available together with the forecasted market values of CZC used in the aFRR capacity allocation process at the latest one hour before the single day-ahead coupling gate closure time, as defined in

~~accordance with Article 47(2) of the CACM Regulation. The information includes:~~

- ~~i. date and time when the decision on allocation was made;~~
- ~~ii. period of the allocation;~~
- ~~iii. volumes allocated; and~~
- ~~iv. market values used as a basis for the allocation process in accordance with Article 39 of the EB Regulation.~~

~~b) the information on the use of allocated CZC capacity for the exchange of aFRR capacity at the latest one week after the use of allocated CZC:~~

- ~~i. volume of allocated and used CZC for each MTU and for each bidding zone border;~~
- ~~ii. volume of released CZC for subsequent timeframes for each MTU and for each bidding zone border; and~~
- ~~iii. estimated realised costs and benefits of the allocation process. The TSOs will, based on the aFRR capacity bid data, estimate the reduction in procurement costs compared to fulfilling the reserve requirements of the demanded FRR without allocating CZC for exchange of aFRR capacity. These estimated costs and benefits will be published as values for each day for the Nordic aFRR capacity market.~~

(b) the description of the algorithm for capacity procurement optimisation function, aFRR capacity bid selection and pricing of procured aFRR capacity in accordance with Article 7. This document shall be published and kept updated with every new version of the capacity procurement optimisation function and aFRR capacity bid selection and pricing at least one month before the application of this algorithm. The document shall be publicly available on the TSOs webpage. Subject to approval pursuant to Article 18 of the EB Regulation, a TSO may withhold the publication of information on offered prices and volumes of balancing capacity pursuant to paragraph (1)(a) bids if justified for reasons of market abuse concerns and if not detrimental to the effective functioning of the electricity markets. A TSO shall report such withholdings at least once a year to the relevant regulatory authority in accordance with Article 37 of the Electricity Directive and pursuant to Article 12(4) of the EB Regulation.

TITLE 3

Final provisions

Article 45

11

Publication and implementation of the ~~Proposal~~Nordic aFRR Capacity Market Rules

1. The TSOs shall publish the ~~Proposal~~Nordic aFRR Capacity Market Rules without undue delay after ~~the relevant regulatory authorities in the Nordic Capacity Calculation Region have approved the Proposal or a decision has~~

been taken by the Agency for the Cooperation of Energy Regulators approval in accordance with Article 5(6), Article 5(7), Article 6(1) and Article 6(2) of the EB Regulation paragraph (2).

1. The TSOs shall implement the Proposal no later than 12 months after the approval by the relevant regulatory authorities in the Nordic Capacity Calculation Region or a decision has been taken by the Agency for the Cooperation of Energy Regulators.
2. The TSOs shall implement the Proposal Nordic aFRR Capacity Market Rules no later than 12 months after a decision has been made by the EFTA Surveillance Authority in accordance with point 47(d) of Annex IV to the EEA Agreement and subject to and as soon as the Norwegian energy regulatory authority, NVE-RME, has taken the subsequent decision on implementation into Norwegian law or as soon as the cross zonal capacity on all bidding zone borders of the Nordic CCR is calculated in accordance with the capacity calculation methodologies developed pursuant to the CACM Regulation once approved in accordance with the relevant requirements set in Annex IV, point 47(d), of the EEA Agreement.
- 2.3. The TSOs shall jointly implement the Nordic aFRR Capacity Market Rules in ~~co-operation~~, enabling a common procurement and exchange of aFRR capacity in the Nordic LFC ~~block~~ Block.

Article 16

12 Language

The reference language for ~~the Proposal~~ these Nordic aFRR Capacity Market Rules shall be English. For the avoidance of doubt, where TSOs need to translate ~~the Proposal~~ these Nordic aFRR Capacity Market Rules into their national language(s), in the event of inconsistencies between the English version published by TSOs in accordance with Article 7 of the EB Regulation and any version in another language, the relevant TSOs shall, in accordance with national legislation, provide the relevant national regulatory authorities with an updated translation of ~~the Proposal~~ these Nordic aFRR Capacity Market Rules.